Trailblazing: New Pathways From High School to College and Careers

As never before, schools need a laser-like focus on preparing students for a dual purpose: to further their education and to enter the workforce. Schools should start early to help students see a vision for their futures and move more seamlessly from high school to college and careers.

To do that, it’s necessary to create strong career pathways that help more students earn industry and postsecondary credentials to obtain jobs of value in the 21st-century economy.

This newsletter will explore solutions such as motivating students by designing real-world projects in academic and career and technical education (CTE) classrooms, aligning pathways to the workplace and enrolling more students in CTE courses.

Community and Technical College:
Students Earn Credible Credentials

Educational attainment traditionally signaled how prosperous a young person’s future would be. Those who graduated from high school and went on to graduate from college typically had bright futures. But today, that’s not necessarily the case.

While higher education attainment of any kind benefits individuals in the labor market, The Southern Regional Education Board has found the future looks brighter for young people with the right postsecondary credentials, according to Gene Bottoms, SREB’s senior vice president.

The problem: Not enough students are earning postsecondary credentials and degrees. At the 29th Annual HSTW Staff Development Conference in Atlanta, Bottoms said school districts, high schools and community colleges need to create strong career pathways that help more students earn industry and postsecondary credentials and obtain good jobs with wages that can sustain a family.

To do that, more high school students should attend community and technical colleges and get on pathways to postsecondary attainment and career advancement. Bottoms asserted many students don’t know the value of community college, have no vision for their futures and are unaware of jobs opportunities; thus it appears “jobs are hidden from them.”

One of the greatest challenges: How do we provide more young people with an education that connects the classroom with the workplace and prepares them to succeed in postsecondary education and 21st-century careers?

The Solution:

1. Transform education with rigorous, relevant career pathways that align secondary, postsecondary and workplace learning and lead to postsecondary credentials that help individuals secure good jobs.

2. Double the percentage of young adults who earn postsecondary credentials by age 25 over the next decade. These credentials include advanced industry credentials, postsecondary certificates and degrees at the associate degree level or higher.
This challenge and transformation was addressed by SREB’s Commission on Career and Technical Education. Bottoms shared the Commission’s findings:

**Actions States Can Take to Build Challenging Pathways**

- Build bridges from high school to postsecondary education and the workplace by creating rigorous, relevant career pathways driven by labor market demand.
- Expect all students to graduate academically ready for college and careers.
- Select assessments of technical and workplace readiness standards by offering long-term value to individual students, employers and the economy; carry college credits; and are directly linked to more advanced certifications and further study.
- Provide all high school career pathway teachers, especially new teachers from industry, with the professional development and fast-track induction programs they need to meet high academic, technical and pedagogical standards and enhance students’ academic and technical readiness for college and careers.
- Adopt a framework of strategies to restructure low-performing high schools around rigorous, relevant career pathways that accelerate learning and prepare students for postsecondary credentials and degrees.
- Offer early advanced credential programs in shared-time technology centers, aligning curricula, instruction and technology with home high schools and community and technical colleges.
- Incentivize community and technical colleges and school districts to double the percentages of students who earn certificates, credentials and degrees by setting statewide readiness standards and aligning assessment and placement measures with those standards.
- Design accountability systems that recognize and reward districts, high schools, technology centers, and community and technical colleges that double the number of young adults who acquire postsecondary credentials and secure high-skill, high-wage jobs by age 25.

To learn more about these actions, read *Credentials for All: An Imperative for SREB States*, the report of the SREB Commission on Career and Technical Education.

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**CTE Is Not a Lesser Form of Learning But a Different Form of Learning**

Deidra Gammill, a National Board Certified English teacher, was transferred from the English department at Petal High School in Petal, Mississippi, to teach in a new academy program. At the time, she admitted believing career and technical education (CTE) courses were less about rigor and more about fun than core academic classes.

When her daughter fell in love with the idea of becoming a chef and opening her own restaurant after taking a culinary class, Gammill insisted she go to college and earn her bachelor’s degree in culinary arts rather than entering a two-year vocational certificate program.

However, Gammill later realized her daughter’s degree would not be the deciding factor determining her job prospects after college. An internship and kitchen experience, which were offered at the local community college’s culinary program, would be the most important parts of her résumé. Plus, many of her daughter’s college professors also taught at the community college, and she could have received the same quality of instruction at a fraction of the price.

The real eye-opener about the value and rigors of CTE came after Gammill began teaching in the academy program. She explained the stigma attached to CTE reflects the disconnect between students, teachers and schools and the goal of education. “Education is not the acquisition of knowledge and standardized test scores,” Gammill said. The goal is to instill in students the importance of critical thinking, career readiness, integrity, productivity, empathy, collaboration and innovation.

American education claims to elevate the importance of grit, collaboration and critical thinking; to celebrate failure as a part of the learning process; and to recognize the “career” portion of college and career ready. Instead, Gammill said most people belittle the very courses designed to teach critical thinking and grit, stigmatize those who choose CTE courses, and stereotype CTE as a “lesser” form of learning taught by “less than” teachers to “less than” students.

According to Gammill, “Academic subjects and CTE courses are two sides of the same coin.” They teach many of the same concepts and skills, just in different ways.

“Where better to learn innovation and collaboration than a CTE classroom?” argued Gammill. Employers want and need employees with soft skills, critical thinking and the ability to work with different kinds of people.

“Academics and CTE are two halves of a whole, and when they work together great things happen.”

— Deidra Gammill
CTE courses are also highly specialized. A typical automotive mechanic’s class requires students to read and comprehend advanced technical manuals, some written at the 13th-grade level, and work on internal combustion engines using physics, algebra and geometry.

Overall, classes provide project-based learning (PBL), authentic learning experiences and theory put into practice. “Academics and CTE are two halves of a whole, and when they work together great things happen,” Gammill said. She added core academic and CTE teachers should work together and collaborate weekly to develop assignments and learn from each other. CTE teachers can share their PBL designs, and academic teachers should encourage students to explore CTE course offerings.

Today’s prevailing research also indicates taking both academic and CTE classes can lower students’ likelihood of dropping out of school and help students prepare for the challenges of college and the workforce. This is due in part to students being able to see how their academic studies blend with real-work situations.

Ultimately, the question is not which secondary institution are your students going to attend. The question is how can we, as teachers and administrators, prepare them to problem solve and work in the real world of the 21st century?

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Building Bridges: Connecting the Middle Grades With CTE Centers

Dothan Technology Center (DTC), a stand-alone career and technical education (CTE) center in Dothan, Alabama, recognizes schools have a responsibility to support students in making wise decisions about further study and careers. Achieving that goal requires differentiated student activities and intentional scheduling.

The Challenge

DTC staff were not satisfied with the number of students choosing CTE. Principal Terry Scott understood 500 students coming from two 1,250 student-high schools was inadequate. Waiting until ninth grade to introduce students to career pathways was deemed too late. Through the Southern Regional Education Board initiatives, Technology Centers That Work (TCTW) and High Schools That Work (HSTW), Dothan City Schools implemented a focus on the middle grades. DTC developed programs for fifth through eighth grade to engage students with the center. As a result, enrollment has doubled at the center.

“Good relationships make the plan work,” according to DTC counselor Emily Peluso. She has established close relationships with both high school counselors and the four middle grades school counselors. “There are no barriers we can’t work through,” explained Peluso. Relationships are key, with students and the adults.

DTC has created several activities and programs to introduce middle graders to the career pathway concept. “At this time the only pathway offered at the middle school level is the Gateway to Technology pre-engineering course from Project Lead the Way. We teach this course in our two magnet middle schools,” she noted.

Program Activities

Fifth-Grade Tour — Business partners are invited in to DTC to work alongside DTC students as fifth-graders tour the pathways. Young students observe the older students involved in engaging projects while business partners describe careers associated with a wide interest inventory providing an intentional focus on pathways.

Eighth-Grade Career Projects — A career fair with a focus on students’ interests has raised the bar for eighth-graders in the Dothan City Schools. Each student develops a project based on his or her interest inventory. Students choose a career; they then research and develop career choices in core classes. College requirements, salary, income over time, résumés, proper dress and job descriptions are a part of the project. Students receive a grade in each subject area and also present before community judges in a competition-style format.

Previously, the projects have been on presentation boards. By using student iPads, projects are completed in an app of the students’ choosing such as Keynote. “This is completely student driven,” stated Peluso. “Pathways connecting DTC with their interests are highlighted.” As a culminating activity, eighth-graders visit DTC and actually participate in a project in each pathway. For example, in culinary arts, students make pretzels; in engineering, students build simple robots, and in graphic arts, students experiment with designing posters.

“We recruited as many businesses as possible, but we usually ended up with about 20-30 businesses. We reached out to our chamber of commerce members, personal contacts and our advisory board members to serve as speakers. Each speaker had a booth and the students would rotate at a designated time and hear the speaker, look at the visual aids brought by the speakers and ask questions.”
Career Summit — In addition to the career projects, eighth-graders also attend a career summit. Students attend the summit by schools employing a scavenger hunt format to learn about careers in the community. This summit, sponsored by the local area chamber of commerce, enables students to talk with experts in various career fields.

“The scavenger hunt included a list of questions for each student. The questions range from the work conditions for a certain career to the education requirements needed for a certain career. The students would have to listen to the speakers, ask questions and read the displays in order to find the answers to the questions. At the end, each student would turn in his or her completed scavenger hunt to go into a drawing for door prizes,” said Peluso.

“Each of our programs has an advisory board consisting of seven to 10 people from business and industry and one current student. We work with our current partners and the chamber of commerce to find qualified people to serve on the boards. Some of the advisers are former CTE teachers, current business owners, managers, etc. We like to have a variety of people on each board,” said Peluso.

Intentional Scheduling

Finally, scheduling is “intentional.” High school counselors and DTC counselor Peluso register middle grades students through parent conferences using students’ interests. This intentional focus on middle grades creates results that are student-interest driven and focused on careers. School now has a purpose for students and is a seen by them as a means to an end — a career offering good pay and future advancement. Students are realizing that college is not a destination, but part of a path to success.

The effort to engender greater student interest has borne fruit. For the 2015-16 school year, 70 percent of all ninth-graders have enrolled for courses at DTC. Electives in high school are being shifted to DTC.

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Embedding Academic Learning in CTE Instruction: Exploring the Evidence

Mathematics and English/language arts teachers are now a perpetual line item in staffing budgets at CTE centers in West Virginia. Placing academic teachers in a CTE environment has enabled centers seeking to get away from “learning in a silo” methodology. The focus of instruction at the centers remains providing high-quality CTE instruction, but adding English and mathematics teachers to the mix better prepares students for college and careers through effective collaboration with CTE teachers.

Ben Franklin Career Center in Charleston has been heavily involved and a leader in this process. SREB school improvement specialist Kathleen McNally said, “What we learned right off the bat is that teachers’ approach really matters.” The intent is for English teachers to elevate the literacy experiences of students. Mathematics teachers are expected to do the same, McNally added.

All teachers had to learn that “skilled” and “intellectual” pursuits should not be separated. Academic and CTE teachers needed relationships to achieve this, planning and observing together to find common ground. There were different levels of enthusiasm at first, but most teachers have been open to the new approach and have embraced providing deeper support and understanding of mathematics and literacy through CTE.

Adoption

Ben Franklin teachers have embraced the authenticity of CTE. They have worked to determine what literacy and math is inherent in each program area, including potential long-range applications. They have collaborated to move from the traditional instructional mindset to a modernized understanding of teaching and learning to upgrade student achievement. Included in this shift are several approaches, such as having projects developed to include at least two CTE programs.

Allowing students to work in groups to come up with multiple correct answers is another approach. Mathematics teacher Jessica Campbell noted there are numerous ways of solving the same problem on paper or with the ruler, and students themselves have different modes of learning and thinking that can all lead to correct answers. In group work, students share these various thought processes and reach a higher level of understanding.

Another guideline provided for integrating academics with CTE was not to stop the flow of a project just to teach a math or English lesson. Academic lessons should be taught “just in time” as the math concepts or literacy information are needed for the project. This timing allows students to see the value and application of the academics.

According to English teacher Sue Sweat, “The key to working with CTE instructors and their students is letting them know that I value the technical content and skills they are teaching and learning as much as I value the literacy skills I am sharing with them. My goal,
when brainstorming ideas for projects, planning possible literacy integration lessons or enhancing lessons already being taught in the CTE class, is always to make the CTE content the driving theme or topic of my lesson idea.

Acceptance

Ben Franklin Career Center educators have learned that through planning, building relationships, and understanding the value of both academic and technical education, integrating mathematics and literacy can lead to increased student achievement. They are on the path of learning, as are their students.

Overall, educators at Ben Franklin Career Center report having grown in their knowledge and appreciation of teachers of other subjects. In their quest for improving student achievement, they have learned better approaches to implementing collaborative instruction and better preparation of students for future challenges.

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Never Tried True Project-Based Learning? A Beginner’s Primer

Project-based learning (PBL) is a teaching method that engages students in real-world problems and allows them to research, think critically and ultimately, acquire a deeper knowledge of standards and competencies required for success in school and life.

“‐The hands-on, authentic learning experiences for students trump traditional lesson designs,” according to Gary Wrinkle, a lead school improvement consultant at the Southern Regional Education Board who trains teachers in using PBL.

True project-based learning has a discovery exploration process that provides students voice and choice in what they produce. PBL drives learning and becomes the way students learn content; it is not something students engage in after teaching is complete, noted Wrinkle. A popular saying used by the Buck Institute for Education is, “PBL is the meal, not the dessert.”

Steps to Developing a PBL Unit

Standards: The first step, Wrinkle said, is to consider standards — the essential information that students must know and be able to do. PBL also provides a great opportunity to address 21st-century skills such as communication, creativity, critical thinking and collaboration.

Teachers should always choose the cluster of literacy, math and content standards to emphasize in their projects and ensure students know that they are being assessed on those standards. It is critical that teachers engage students using assignments that enable them to apply the standards to understand and complete projects.

Current Events: After standards have been identified, Wrinkle said teachers should consider current community or news events that could be connected to their content. These ideas will help engage students to see connections between the classroom and the outside world.

Driving Question: Once connections are established, develop driving questions. Wrinkle noted that driving questions are used to direct student learning. They help teachers and students stay on task and clarify for students the focus of the project. Driving questions are open-ended and make students want to know more about the subject. For example: How safe is our water? How can we ensure high-quality customer service?

Scenario: Once driving questions are drafted, develop a scenario. Scenarios put the learner in a real-world role, outline the challenge, provide direction on what is needed and outline the audience for the work.

The following template may help in developing a scenario. You are a (insert a real-workplace role). You are faced with (insert a problem). You must (insert what must be done to solve the problem). Once you have decided on a course of action, you will (insert an opportunity for presentation to an authentic audience).

Assessments: Teachers should also think about assessments within their projects. How will you use formative and summative assessment to provide feedback and grades for your students? Wrinkle explained that formative assessment is assessment “for” learning and is about checking for understanding and clarifying what additional instruction students may need. Summative assessment is “of” learning and about end products and exhibitions of learning.

Mapping: The next phase is project mapping. Mapping involves brainstorming every activity students and teachers will do. It includes estimating how much time each activity will take. This process helps the beginning teacher avoid leaving something out of instruction and ensures adequate time is provided for the project. The mapping process should take into consideration whether the information needed for students will be learned during the project, be directly taught or be prior knowledge. This facilitates a well-planned and productive flow during the project.
While there are many components to developing a project, Wrinkle pointed out that all work should be done before the project is presented to students. "Good teaching requires good planning," he insisted.

**Judging the Quality of a PBL Unit**

Wrinkle said one method to consider when deciding the quality of PBL projects is to use the “Six A’s”: authenticity, academic rigor, applied learning, active exploration, adult connections and assessment. Considering a project in light of each “A” will help teachers find their areas in need of improvement. Projects evolve over time, and each time a teacher implements a project, small changes are made based upon past experiences.

Wrinkle reflected on the personal experiences of a social studies teacher he trained in El Paso, Texas. Miguel Chavez designed a project around the Gross National Product (GNP). He had taught the content traditionally for a number of years (lecture, worksheets and classroom discussion) and found that students had a difficult time recalling information.

Then, he chose to design a project with the driving question, “How does the GNP of Japan affect the economy of the United States and El Paso?” Students were put into teams to research the topic and ultimately put together a class presentation.

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**Engaging Students Through Project-Based Learning**

**North Marion High School** in Farmington, West Virginia, had a freshman problem. Too many ninth-grade students were not engaged in the customary learning environment. This resulted in high failure rates, low daily attendance and an increase in disciplinary referrals — all signs that could eventually lead to students later dropping out.

The school knew something had to be done. To come up with ideas and strategies to energize students and get them interested in school, teachers went straight to the source. Students were surveyed and asked what would make them want to come to school and stay in school. One sentiment that stood out was, “They wanted to be more involved in learning and not just fill out worksheets,” said Mary Ann Mullenax, a ninth-grade English teacher.

That set the ball in motion for change. The curriculum council, made up of department heads, researched and brainstormed solutions to a problem that remains pervasive across the country — the ninth-grade bulge. The bulge, or bottleneck, refers to the percentage increase in the number of students enrolled in ninth grade over the number who were enrolled in eighth-grade during the previous year and 10th grade during the subsequent year.

The curriculum council determined some schools were having success with project-based learning (PBL), so they applied for and won a grant through the state of West Virginia to implement PBL at North Marion.

Staff members, including Mullenax, then visited other schools and watched PBL in action. After initial teacher training, PBL was implemented in the 2011-12 school year in the freshmen academy (about 225 students) as the primary instructional framework to increase student engagement, relevance, rigor, learning and achievement.

**Shaking Up the Status Quo**

Mullenax and other ninth-grade teachers, including Alex Milanese, Melissa Jura and Alicia Milanese, shook up the status quo at North Marion. They started with a relentless focus on ways to make ninth grade successful for students by establishing a culture of high expectations for all students and using project-based learning (PBL) as a tool to engage and motivate students. “Clearly what we were doing started to work because we saw a drastic increase in our graduation rate” said Milanese, who teaches math. He reported the graduation rate was nearly 71 percent in the 2008-09 school year, but in the 2014-15 school year, five years after PBL was implemented, the graduation rate improved to 95 percent.

To keep the positive momentum moving forward, the principal granted the teachers’ request to alter the ninth-grade academy schedule into a four-block schedule with an integrated curriculum and collaborative teaching.

**Integrated Curriculum**

The ninth-grade academy’s integrated curriculum and block schedule combines math and science into one 75-minute class and English and history into another 75-minute class. That means students have the benefit of having two content teachers in one classroom. In collaborative classrooms that include special education students, a special education teacher is also present. There is no bell-to-bell schedule; instead students transition to their second block of classes at a pre-determined time. The schedule allows students more time in class and teachers more freedom and flexibility.
Central to the integrated curriculum at North Marion is project-based learning. Jura, a history teacher, stressed the importance of teamwork when doing projects. “That’s a real-world thing on any job you have,” she said. Grouping students is done in multiple ways. In some instances, students are surveyed to determine certain skill sets. In other cases, pretests, ability groups and desired study focus help determine group arrangements. Sometimes, students are assigned to groups randomly.

The team of North Marion teachers also underscored the importance of having an entry event to jump start projects. The entry event can be any number of things: guest speakers, experiments, skits or field trips. “The whole point is to hook the students and set up what the project will be about,” said Milanese. For example, as a class project, students in his math and science class built a roller coaster, and as part of the entry event they skyped with a roller coaster engineer who got them pumped up by telling them about her job. “When students see the relevance of what they are doing, they are much more engaged,” insisted Milanese.

A project in the history and English class was “Meet the Press.” Jura said students read the novel *The Giver* and studied freedom of information around the world. They combined that with studying ancient empires. Students had to represent historical or literally figures and answer contemporary questions at a mock news conference.

Mullenax, who co-teaches with Jura, said she’s noticed a huge difference in students since they began using project-based learning. “Over the past 30 years I noticed a lot of heads on desk, students not engaged, not excited about what they are doing. We don’t see that now. Teammates won’t let them put their heads on the desks.”

The grading and scoring methods include the use of checklists for some tasks while rubrics were used for others. The teachers also developed a point splitting process that allows students to participate in grading projects. Students decide among themselves how to split up the points. They typically make a list of what each student did to contribute to the final project and negotiate amongst themselves what grade each individual team member should get on the final project. Of course, teachers step in when necessary, but Mullenax said, “It’s amazing to me that 14- and 15-year olds will be very honest.”

In addition to the graduation rate soaring to more than 95 percent, Mullenax believes project-based learning and the integrated curriculum have created a sense of family in the ninth-grade academy. Students arrive from four sending middle grades schools, and because of North Marion’s program, students have developed connections and relationships with students and teachers. “It fosters the things kids need to feel like they belong somewhere,” said Mullenax.

The upper grades operate on a traditional schedule of 50 minute, seven period classes, but after witnessing the success of the ninth-grade academy, there is more collaboration among those teachers and a greater emphasis on project-based learning.

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The *Lakota Local School District* in Liberty Township, Ohio, has partnered with area businesses to implement an effective high school internship program. School system staffing has enabled teachers and leaders to support the district-managed internship model and the employer-managed internship model. Connecting area business with Lakota district schools has benefited students, businesses and organizations, schools and the community.

Partnerships Ongoing

Beginning three years ago with a health career internship, the school system now has partnerships with 10 businesses offering health, engineering, business and nonprofit internships. The program begins with job-shadowing experiences in the middle grades and ends with internships for 11th- and 12th-graders. According to Lon Stettler, executive director of the Lakota district, through visionary leadership with business organizations, students now see various day-to-day occurrences in these 10 businesses. “The program has resulted in an increase in the pipeline of students to attract them into local high-demand careers, providing a win-win situation for everyone,” he said.
Program Benefits

According to Lakota East High School teacher Julie Deak, students report the internship program is one of the best academic experiences in high school. They learn to manage time better, become more efficient, and acquire soft skills while gaining an understanding of employer expectations. The community gains a world-class workforce that drives the regional economy and is an asset to economic development. The school connects learning opportunities to students’ career cluster of choice and enhances student learning. Businesses provide mentorship for students. “This builds a positive community image while facilitating recruitment of qualified employees with less training costs and decreased turnover,” noted Deak.

How It Works

The internship process begins with an application and an interview. In the district-managed internship model, the school district conducts the selection process, including the interview. In the employer-managed internship model, students apply to the business partner, which manages the selection process. The school system participates by signing a referral agreement with the business.

In both models parents must sign a consent form and the student must provide his or her own transportation. Students in the district-managed model complete internship rotations and a journal responding to reflective questions connecting the internship with what they learned in high school courses. They receive elective high school credit. Using the district’s credit flex process, students in the employer-managed model may apply for elective credit. The grade is pass/fail and is not factored into students’ grade-point averages.

Stettler pointed out that one of the most important aspects of the process is to have senior leadership from the businesses on board. “Senior leadership people have a passion that may not be there when middle leadership is involved, and they are able to make things happen,” he noted. Another crucial component is having one key teacher in each school building to do the legwork, such as working with counselors, providing applications and information, and screening for interviews.

Engineering students report the rotation has helped to clarify career direction within their chosen disciplines. As they receive feedback, teachers have responded and made changes in their programs based on recommendations from businesses. One mother shared her astonishment at seeing how confident her child was after the internship experience. Positive comments continue to come in from all sides involved in the internships.

For those interested in establishing an internship program, the school system has a website at http://www.lakotaonline.com/programs.cfm?subpage=3427 where information on the internship may be found.

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